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PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Automatic Coin-operated Amusement Machine

We, NORAH SOPHIA CROMPTON, a British subject, of 2 Hill Crest Gardens, Ramsgate, Kent, and JAMES ERIC CROMPTON, a British subject, of The Beeches, Lanthorne Road, Broadstairs, Kent, legal representatives of ALFRED JAMES LITOLFF CROMPTON (deceased), a British subject, late of 1 Viking Court, Cliftonville Avenue, Cliftonville, Margate, Kent, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

15 This invention relates to amusement machines of the kind which may be found in fun fairs, amusement arcades or clubs, and the object of the invention is to provide a machine which is completely automatic in operation, simple in conception and construction, and in which the user may see precisely what happens to the coins which have been inserted in the machine.

The invention consists of an automatic coin operated amusement machine comprising a substantially vertical panel having a number of coin slots and a number of springy pins projecting from the panel to cause coins falling down the surface of the panel to be deflected, a plurality of openings in the panel through which coins may pass, a switch associated with each opening which is actuated by the passage of a coin, one or more sloping coin receiver chutes at the lower end of the panel down which coins failing to enter one of the openings may slide, a plurality of coin receivers opening from the or each chute into which coins sliding down the chute may fall, the coin receivers being arranged to hold differing numbers of coins, a coin tray to receive coins sliding down the chute or chutes and failing to enter one of the coin receivers, the coin

tray being accessible to the user of the machines to enable him to recover coins 45 therefrom, and an electromagnetic actuator for each of the coin receivers which, when energized, opens the receiver to allow the coins to fall into the coin tray, each actuator being in an energizing circuit with one 50 switch, whereby a coin passing through an opening causes the associated actuator to discharge the contents of the respective coin receiver into the coin tray.

To promote a ready understanding of the 55 invention, one embodiment of the amusement machine will now be described with reference to the single Figure of the accompanying drawing. This drawing is diagrammatic and only those parts necessary to an 60 understanding of the invention are shown.

In this particular embodiment a substantially vertical panel 11 is provided and this is conveniently about 20 inches wide by about 2 feet in height. Four coin slots (not shown) are arranged at selected points along the top of the panel so that coins inserted in the slots are allowed to fall vertically down the surface of the panel 11. At various points over the area of the panel springy pins 70 (not shown) project from this surface. These pins are conveniently made of stainless steel or spring steel rod and each passes through a clearance hole in the panel, each pin being attached to a block fixed to the rear surface 75 of the panel so that whenever a falling coin strikes a pin the springiness of the pin causes the coin to bounce and to be deflected in a direction which depends upon the position in which the coin strikes the pin. 80

The panel contains eight openings, respectively 12 to 19, which may conveniently be about one and one-half inches square, and each of the openings is obscured by a metal plate 20 (only one of which is shown) cut 85 to the silhouette of a cup of the kind used

[Price 4s. 6d.]

as sports trophies, the metal plate being parallel to and spaced from the surface of the panel, the arrangement being such that a coin which appears to fall into the cup will also fall through the hidden opening and pass down a steeply sloping chute (not shown) behind the panel. Two of the openings, respectively 12 and 13, are near the top of the panel and are conveniently spaced about four and one-half inches from the top of the panel and six inches on either side of the vertical centre line 21 thereof. Two further openings 14 and 15, covered by similar representations of cups, have their centres spaced about eight inches from the top of the panel and about two and one-half inches on either side of the centre line 21. Another two openings, respectively 16 and 17, have their centres placed respectively below the first two openings and are spaced about eleven and one-half inches from the top of the panel, while the remaining two openings 18 and 19 are placed respectively below the second pair 14 and 15 and are spaced about seven inches below the said second pair. Thus, the openings define four rows and four columns. The coin slots previously referred to are conveniently placed in vertical alignment with the columns.

Each of the metal representations of a cup has a circular piece, indicated as 22 in the cup 20, cut out of its centre and a transparent disc located in this hole bears a legend which is illuminated by a lamp placed behind the respective opening in the panel. The legend may be of any desired kind but in the example being described the upper two cups over the two openings 12 and 13 bear the legend "12 max," the next lower two cups over the openings 14 and 15 bear the legend "4 max," the third lowest two cups over the openings 16 and 17 bear the legend "8 max" and the lowermost two cups over the openings 18 and 19 bear the legend "2 max." Below the lowermost cups two ramps, respectively 23 and 24, are placed so that they project outwardly from the panel surface, and they slope downwardly from the outer edges of the panel towards the centre, at which there is a gap 25. This gap leads to a pair of coin receiver chutes, respectively 26 and 27, which extend from the central gap between the ramps downwardly and outwardly towards the sides of the panel, but they are cut off short at points, respectively 28 and 29, some distance from the sides. Two deflector plates, respectively 30 and 31, placed below the ends of the chutes, lead inwardly from the sides of the panel for some distance and terminate above a coin tray (not shown) which is surrounded by a metal bezel, indicated by dotted lines 32, through which the user of the machine may obtain access to the coin tray.

Spaced along each of the chutes 26 and 27 are four tubular coin receivers, each having an internal diameter appropriate to accept the coins with which the machine is intended to function, for example, penny pieces. The two coin receivers 33 and 34 nearest the junction of the two chutes at the centre of the panel are each of a depth sufficient to hold two coins, the next two coin receivers 35 and 36 are of a depth sufficient to receive a stack of four coins, the next two receivers 37 and 38 are of a depth sufficient to accommodate a stack of eight coins and the remaining coin receivers 39 and 40 are each of a depth sufficient to accommodate a stack of twelve coins. Each coin receiver is fitted with a slide, indicated at 41 on the coin receiver 33, which, when withdrawn, allows the coins in the receiver to strike a curved wall 42 or 43 down which the coins may slide through an aperture 44 or 45 between the said wall and one or other of the deflector plates 30 and 31 and thence to fall into the coin tray.

A cover glass (not shown) is placed in front of the panel 11 to leave a space of about three-sixteenths of an inch or a little less, so that coins, while sliding down the surface of the panel, are kept in a substantially vertical position. Coins failing to enter any of the cups and falling on to one or other of the ramps 23 and 24 slide down these ramps to the gap 25 between the ramps and when they pass through this gap they fall on to two plates, respectively 46 and 47, so formed that the coins are turned and slide down one of the two chutes 26 or 27 lying on one or other of their faces. The rear wall against which the coin receiver chutes 26 and 27 are mounted are set back with respect to the panel 11 to allow the chutes 26 and 27 to be slightly wider than the diameter of the coins.

Inside a lower wall is a series of lamps arranged as part of a ring, each lamp being covered by a translucent disc, indicated by references 48 to 55, bearing a legend corresponding to the legends in the cups, the legends in the present instance being numbers each corresponding to the number of coins which the adjacent coin receiver will accommodate. Thus the two discs 48 and 55 nearest the two outermost coin receivers 39 and 40 are marked with the figure "12," the two discs 49 and 54, adjacent the coin receivers 37 and 38 holding eight coins, are marked with the figure "8," the two discs 50 and 53, adjacent the coin receivers 35 and 36 holding four coins, are marked with the figure "4" and the two discs 51 and 52, adjacent the coin receivers 33 and 34 holding two coins, are marked with the figure "2." Inside the part ring formed by the discs is the legend "Maximum pay-out." The last mentioned legend is omitted if the other legends do not refer to numbers of

coins.

At its lower end each of the coin receivers is provided with a slide (such as slide 41) which may be opened as previously mentioned. Each slide is connected to an electromagnetic actuator (not shown) associated with a spring and so arranged that when the actuator is energized the slide is withdrawn to allow the coins to fall out of the receiver and eventually into the coin tray, and when the actuator is de-energized the spring returns the slide to close the coin receiver. The steeply sloping vertical chute behind each opening is provided with a central slot and through this slot projects a wire which forms a pivoted arm. The steeply sloping chutes are of substantial length, so that a coin passing down the chute deflects the arm and causes it to swing through a very large angle, which takes an appreciable amount of time. Each arm is associated with a switch of suitable construction, for example a micro-switch, and is so arranged that as soon as an arm begins to move the switch is closed and it is kept closed during the whole of the long downward swing of the arm and during the return swing of the arm (under the influence of a spring), after the arm has been released by the coin. This ensures that each switch when actuated by the passage of a coin is kept closed for a comparatively long period of time. The comparatively long period of closure of the switches ensures that ample time is allowed for the electromagnetic actuators to make their full stroke and open the coin receivers fully.

The cups over the two openings in the panel bearing the legend "12 max" have the associated switches connected with the actuators associated with the coin receivers 39 and 40 on the respective sides of the panel. The switches associated with the openings 16 and 17, whose cups are marked with the legend "8 max," are in circuit with the actuators of the coin receivers 37 and 38 on the respective sides of the panel. The cups associated with the openings 14 and 15 bearing the legend "4 max" have their switches in circuit respectively with the actuators of the coin receivers 35 and 36 and the cups covering the openings 18 and 19 which bear the legend "2 max" have their switches respectively in circuit with the actuators of the coin receivers 33 and 34 which are adapted to contain up to two coins.

The lamps placed behind the openings 12 and 19 are of a type which operate at the mains supply voltage and may conveniently be of 15 watts rating. The lamps behind the disc associated with the coin receivers also operate on the mains supply voltage and are conveniently of 25 watts rating, but each lamp has a resistor connected in series with it so that it burns rather dully and will give about the same light as the 15 watt lamps

normally give. Each of the resistors is connected to a switch which is closed when the associated actuator makes its movement so that the lamp momentarily reaches full brilliance as the coin receiver is emptied. A 24 volts full-wave rectified power supply is provided for the operation of the solenoids of the actuators, which are of the d.c. type.

In operation the user of the machine inserts a coin in any one of the four slots which he cares to choose. The coin, after falling through the slot, strikes a deflecting pin and is then bounced to and fro along the panel, striking different pins and gradually progressing down the surface of the panel. If it fails to fall into one of the "cups" it eventually reaches one of the ramps 23 or 24 leading to the central gap 25 and then falls on to one or other of the two chutes 26 or 27. It then slides down that chute until it reaches the first of the coin receivers (33 or 34) which is adapted to hold two coins and it falls into this coin receiver. If the receiver already contains two coins the uppermost of the coins is approximately level with the surface of the chute and the coin proceeds further along the chute and falls into one of the receivers 35 or 36. If these also are full the coin will enter the third of the receivers but if this is also full it will fall into the last of the receivers 39 and 40 which can hold up to twelve coins. If all the coin receivers are full the coin slides off the end of the chute, strikes the deflecting plate and falls into the coin tray, so that the user of the machine may recover it and use it again.

If the coin falls into one of the cups it actuates the associated switch which energizes the electromagnetic actuator of the associated coin receiver and all the coins in that receiver are allowed to fall into the coin tray, from which the user of the machine collects his winnings.

From the above description it will be evident that all the coins inserted by users of the machine which do not fall into one of the cups are used to fill up the coin receivers and when these are full the coins are returned to the users. Only those coins which fall into the "cups" and produce wins for the users are allowed to fall into a coin box inside the machine casing, where they are retained.

WHAT I CLAIM IS :—

1. An automatic coin operated amusement machine comprising a substantially vertical panel having a number of coin slots and a number of springy pins projecting from the panel to cause coins falling down the surface of the panel to be deflected, a plurality of openings in the panel through which coins may pass, a switch associated with each opening which is actuated by the passage of a coin, one or more sloping coin

receiver chutes at the lower end of the panel down which coins failing to enter one of the openings may slide, a plurality of coin receivers opening from the or each chute into
 5 which coins sliding down the chute may fall, the coin receivers being arranged to hold differing numbers of coins, a coin tray to receive coins sliding down the chute or
 10 chutes and failing to enter one of the coin receivers, the coin tray being accessible to the user of the machine to enable him to recover coins therefrom, and an electromagnetic actuator for each of the coin
 15 receivers which, when energized, opens the receiver to allow the coins to fall into the coin tray, each actuator being in an energizing circuit with one switch, whereby a coin passing through an opening causes the
 20 associated actuator to discharge the contents of the respective coin receiver into the coin tray.

2. A machine as claimed in claim 1 in which the openings are arranged in horizontal rows.

25 3. A machine as claimed in claim 2 in which there are four rows of openings.

4. A machine as claimed in claim 3 in which there are two openings in each row, the openings in the first and third rows
 30 being in vertical alignment to define columns equally spaced by a certain distance from the vertical centre line of the panel, and the openings in the second and fourth rows being also
 35 in vertical alignment to define further columns equally spaced by a different distance from the vertical centre line of the panel.

5. A machine as claimed in claim 4 in which there are four coin slots, respectively
 40 above the columns of openings.

6. A machine as claimed in any preceding claim comprising a steeply sloping chute behind each opening, and a switch associated with each chute having an operating arm
 45 projecting through the chute so that the passage of a coin down the chute causes the switch to be actuated, the switch being in circuit with one of the actuators.

7. A machine as claimed in claim 6
 50 comprising a long slot in each chute, the switch having its operating arm projecting through the slot, a spring to urge the arm to the upper part of the slot, the arm being arranged so that when a coin passes down
 55 the chute the switch is closed as soon as the arm is moved and remains closed for the remainder of its downward movement under the influence of the coin and its return movement under the influence of the spring,
 60 whereby the switch remains closed for a sufficiently long period to ensure that the associated electromagnetic actuator is fully operated.

8. A machine as claimed in any preceding

claim in which each opening is covered 65 by a device spaced from the panel by a distance sufficient to allow a coin to pass between it and the panel.

9. A machine as claimed in claim 8 in which the device is in the shape of a cup of 70 the kind used as sports trophies.

10. A machine as claimed in claim 8 or 9 comprising a piece of translucent material in the device bearing a legend.

11. A machine as claimed in claim 10 75 in which the legend indicates the maximum number of coins which may be won when a coin passes through the associated opening.

12. A machine as claimed in claim 10 or 80 11 comprising a lamp behind the opening to illuminate the legend.

13. A machine as claimed in any preceding claim comprising two ramps each sloping from one side of the panel downwardly 85 towards the centre, there being a gap between the inner ends of the ramps through which coins may fall on to the coin receiver chute or chutes.

14. A machine as claimed in claim 13 in 90 which there are two coin receiver chutes sloping downwardly from the centre of the machine below the gap, there being a plurality of coin receivers opening from each chute. 95

15. A machine as claimed in any preceding claim comprising a number of indicating panels equal to the number of coin receivers, there being one panel adjacent 100 each coin receiver, the panels each bearing a legend.

16. A machine as claimed in claim 15 in which the legend is a number corresponding to the maximum number of coins which the adjacent coin receiver may contain. 105

17. A machine as claimed in claim 15 or 16 in which the legend or number has a lamp behind it to provide illumination.

18. A machine as claimed in claim 17 comprising a resistor in series with each lamp so that the lamp normally burns at less than its full brilliance, a switch associated with each electromagnetic actuator adapted to be closed when the actuator is operated, the switch being connected across the resistor in series with the associated lamp so that when the actuator is operated the associated lamp momentarily burns at full brilliance. 115

19. An automatic coin operated amusement machine arranged and adapted to 120 operate substantially as herein described, with reference to and as illustrated in the accompanying drawing.

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1,087,361

COMPLETE SPECIFICATION

1 SHEET

This drawing is a reproduction of
the Original on a reduced scale.

